

ABSTRACT

Determination of waveguide parameters

5 A method of determining at least one parameter of a waveguide (3) from wavefield data acquired from wave propagation in the waveguide comprises obtaining first and second dispersion curves (9a, 9b, 9c) in the frequency domain from the wavefield data. A frequency interval between the first dispersion curve and the second dispersion curve is found, and this is used in the determination of at least one parameter of the waveguide.

10

The frequency separation $\Delta f(V)$ between the first and second dispersion curves may be found at a particular value of the phase velocity V , and the thickness h of the waveguide can be found using:

15

$$\Delta f(V) = \frac{c_1}{2h \sqrt{1 - \frac{c_1^2}{V^2}}}$$

Here, c_1 is the velocity of wave propagation in the waveguide. This may be found from the asymptotic velocity values of the dispersion curves.

20 [Figs 2,3(c)]